AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions of claims in the application:

LISTING OF CLAIMS:

1. (ORIGINAL) A magnetic head, comprising:
a free layer having an active area and tab regions on opposite sides of the active area;
an antiparallel (AP) coupling layer formed above the free layer, the AP coupling layer being formed of Ir; and
a bias layer formed above each of the tab portions of the free layer, magnetic moments of the tab regions of the free layer being pinned antiparallel to the magnetic moments of the bias layers.

2. (ORIGINAL) The head as recited in claim 1, wherein the Ir AP coupling layer has a thickness of at least about 15Å.

3. (ORIGINAL) The head as recited in claim 1, wherein the Ir AP coupling layer has a thickness of between about 15 and 25Å.

4. (ORIGINAL) The head as recited in claim 1, wherein the Ir AP coupling layer has a coupling strength of at least about 0.5 erg/cm^2.

5. (ORIGINAL) The head as recited in claim 1, further comprising an AP pinned layer structure below the free layer, the AP pinned layer structure includes at least two pinned layers having magnetic moments that are self-pinned antiparallel to each other, the pinned layers being separated by a second AP coupling layer.

6. (ORIGINAL) The head as recited in claim 5, wherein the pinned layers of the AP pinned layer structure are formed of CoFe.

7. (ORIGINAL) The head as recited in claim 1, wherein the free layer is formed on a layer of Cu.

8. (CURRENTLY AMENDED) The head as recited in claim 1, wherein the free layer is formed directly on a layer of NiFe

9. (ORIGINAL) The head as recited in claim 1, wherein the bias layers are formed of materials selected from a group consisting of NiFe, CoFe, Ta, Ru and laminates thereof.

10. (ORIGINAL) The head as recited in claim 1, wherein the free layer and the bias layer both include fcc CoFe.

11. (ORIGINAL) A magnetic head, comprising:

a free layer having an active area and tab regions on opposite sides of the active area;

an antiparallel (AP) coupling layer formed above the free layer, the AP coupling layer having a thickness of at least about 15Å; and

a bias layer formed above each of the tab portions of the free layer, magnetic moments of the tab regions of the free layer being pinned antiparallel to the magnetic moments of the bias layers.

12. (CURRENTLY AMENDED) The head as recited in claim 11, wherein the AP coupling layer is formed of Ir, the AP coupling layer extending along the active area of the free layer.

13. (ORIGINAL) The head as recited in claim 11, wherein the AP coupling layer has a thickness of at least 15 Å.

14. (ORIGINAL) The head as recited in claim 11, wherein the AP coupling layer has a thickness of between about 15 and 25Å.

15. (ORIGINAL) The head as recited in claim 11, wherein the AP coupling layer has a coupling strength of at least about 0.5 erg/cm^2.

16. (ORIGINAL) The head as recited in claim 11, further comprising an AP pinned layer structure below the free layer, the AP pinned layer structure includes at least two pinned layers having magnetic moments that are self-pinned antiparallel to each other, the pinned layers being separated by a second AP coupling layer.

17. (ORIGINAL) The head as recited in claim 16, wherein the pinned layers of the AP pinned layer structure are formed of CoFe.

18. (ORIGINAL) The head as recited in claim 11, wherein the free layer is formed on a layer of Cu.

19. (CURRENTLY AMENDED) The head as recited in claim 11, wherein the free layer is formed directly on a layer of NiFe

20. (ORIGINAL) The head as recited in claim 11, wherein the bias layers are formed of materials selected from a group consisting of NiFe, CoFe, Ta, Ru and laminates thereof.

21. (ORIGINAL) The head as recited in claim 11, wherein the free layer and the bias layer both include fcc CoFe.

22. (ORIGINAL) A magnetic storage system, comprising:
magnetic media;
a head for reading from and writing to the magnetic media, the head having a
structure as recited in claim 1;
a write element coupled to the sensor;
a slider for supporting the head; and
a control unit coupled to the head for controlling operation of the head.

23. (ORIGINAL) A magnetic storage system, comprising:
magnetic media;
a head for reading from and writing to the magnetic media, the head having a
structure as recited in claim 11;
a write element coupled to the sensor;
a slider for supporting the head; and
a control unit coupled to the head for controlling operation of the head.